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Collective Excitations in P-wave Superconductors

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In light of recent experiments study of the collective excitations in unconventional superconductors (USC) becomes very important. It is known now that all possible type of pairing (s-, p- and d-) take place in high temperature superconductors (HTSC) as well as in heavy fermion superconductors (HFSC). After discovery in 1994 by Maeno of triplet superconducting state of strontium ruthenate the special attention has been paid to study of the collective properties of p-wave superconductors (Brusov et al., Balatsky et al, Tewordt). We build by path integration technique 2D and 3D models of p-pairing for superfluids and superconductors (SC). Within these models we calculate the collective excitations in different USC (HTSC, HFSC etc.) under p-pairing. We considered both bulk and 2D systems. Obtained results could be used for interpretation of the sound and microwave absorption data as well as for identification of the type of pairing and order parameter in unconventional SC.